

Appellant: John W. Alcorn
Serial No.: 10/829,625
Filed: April 22, 2004
Title: Container-Managed Method Support for Container-Managed Entity Beans

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Docket: ROC920030352US1

S/N 10/829,625

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John W. Alcorn
Serial No.: 10/829,625
Filed: April 22, 2004
Title: Container-Managed Method Support for Container-Managed Entity Beans

Examiner: Qing Chen
Group Art Unit: 2191
Confirmation Number: 7294
Docket: ROC920030352US1

APPEAL BRIEF
TO THE BOARD OF PATENT APPEALS AND INTERFERENCES
OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

This brief is presented in support of the Notice of Appeal filed on January 27, 2009, from the Final Rejection of claims 1-3 of the above-identified application, as set forth in the Final Office Action mailed on October 27, 2008.

Please charge \$540.00 to Deposit Account 09-0465 to cover the fee for filing an appeal brief. Please charge any additional fees or credit overpayment to Deposit Account 09-0465. Appellant respectfully requests reversal of the Examiner's rejection of pending claims 1-3.

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1. Real Party in Interest

The real party in interest, in addition to the inventors, John W. Alcorn, Eric N. Herness, Arthur T. Jolin, Teresa C. Kan, and Kevin W. Sutter, is the assignee, International Business Machines Corporation, a corporation organized and existing under and by virtue of the laws of the State of New York, and having an office and place of business at New Orchard Road, Armonk, New York 10504.

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2. Related Appeals and Interferences

There are no other prior or pending appeals, interferences, or judicial proceedings, which may be related to, directly affect or be directly affected by, or have a bearing on the Board's decision.

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3. Status of Claims

On January 27, 2009, appellant appealed from the final rejection of claims 1-3 made in the Final Office Action dated October 27, 2008. Finally rejected claims 1-3 on appeal are set forth in the Claims Appendix. Claims 4-20 were canceled without prejudice or disclaimer.

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4. Status of Amendments

Subsequent to the Final Office Action dated October 27, 2008, appellant did not file any amendment.

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5. Summary of Claimed Subject Matter

An embodiment of the invention is described, by way of example and not of limitation, in appellant's specification, at page 6, lines 13-20, at Fig. 1, elements 105, 126, 140, 146, and 160, at Fig. 2, elements 146 and 160, and at Fig. 3, elements 310, 315, 320, 325, and 330, which in pertinent part recite:

“A method ... [is] provided that in an embodiment receive a specification of a method in a container-managed persistence bean and a specification of a procedure in a backend data store, generate code in a helper class associated with the container-managed persistence bean, determine a connector based on a connection factory type, and access the procedure via a backend-specific protocol and the connector. The code in the helper class performs the accessing. In this way, the container-managed persistence bean may access the backend data store without knowledge of the backend-specific protocol.”

With reference to claim 1, an embodiment of the invention comprises a method, which is described, by way of example and not of limitation, in the specification, at page 6, line 13, at page 8, lines 6-20, at Fig. 1, elements 110, 115, and 132, and at Fig. 3, elements 310, 315, 320, 325, 330, and 335.

With further reference to claim 1, an embodiment of the invention comprises receiving a specification of a method in a container-managed persistence entity bean and a procedure in a backend data store, wherein a container generates access calls to the backend data store, and wherein the container-managed persistence entity bean does not include the calls to the backend data store, wherein the container marks transaction boundaries, wherein the container includes the container-managed persistence entity bean, and wherein the receiving further comprises receiving the specification of the method and the procedure from a deployer, which is described, by way of example and not of limitation, in the specification, at page 2, lines 27-30, at page 3, lines 1-30, at page 4, lines 1-16, at page 6, lines 13-20, at page 10, lines 4-23, at page 12, lines 20-29, at page 13, lines 1-30, at page 14, lines 5-12, at Fig. 1, elements 105, 110, 115, 126, 132, 140, and 160, at Fig. 2, elements 140, 132, and 160, and at Fig. 3, elements 310 and 315.

With further reference to claim 1, an embodiment of the invention comprises in response to the receiving, generating code in a helper class associated with the container-managed persistence entity bean, wherein the helper class determines a connector based on a connection factory type, wherein the deployer supplies the connection factory type, which is described, by way of example and not of limitation, in the specification, at page 2, lines 27-30, at page 3, lines 1-30, at page 4, lines 1-16, at page 6, lines 13-20, at page 10, lines 4-23, at page 12, lines 20-29, at page 13, lines 1-30, at page 14, lines 11-15, at Fig. 1, elements 105, 110, 115, 126, 132, 140, and 146, at Fig. 2, elements 140, 132, 144, and 146, and at Fig. 3, elements 320 and 325.

With further reference to claim 1, an embodiment of the invention comprises accessing the procedure in the backend data store via a backend-specific protocol and the connector, wherein the accessing the procedure in the backend data store further comprises invoking the procedure in the backend data store, wherein the code in the helper class performs the accessing and the invoking, and wherein the code in the helper class calls an evaluator class and passes results of the procedure, wherein the evaluator class evaluates the results, which is described, by way of example and not of limitation, in the specification, at page 2, lines 27-30, at page 3, lines 1-30, at page 4, lines 1-16, at page 6, lines 13-20, at page 10, lines 4-23, at page 12, lines 20-29, at page 13, lines 1-30, at page 14, lines 15-21, at Fig. 1, elements 105, 110, 115, 126, 132, 140, 146, and 160, at Fig. 2, elements 140, 132, 144, 146, and 160, and at Fig. 3, elements 330 and 335.

With further reference to claim 1, an embodiment of the invention comprises receiving a specification of input and output records for the procedure in the backend data store, which is described, by way of example and not of limitation, in the specification, at page 6, lines 13-15, at page 10, lines 4-23, at page 12, lines 20-29, at page 13, lines 1-30, at page 14, lines 8-11 and 15-18, at Fig. 1, elements 105, 110, 115, 126, 132, and 160, at Fig. 2, elements 132 and 160, and at Fig. 3, elements 315 and 330.

With further reference to claim 1, an embodiment of the invention comprises mapping the input and output records between the method in the container-managed persistence entity bean and the procedure in the backend data store, wherein the output records comprise the results, and wherein a state of the container-managed persistence entity bean persists beyond

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a lifetime of an application that uses the container-managed persistence entity bean, which is described, by way of example and not of limitation, in the specification, at page 2, lines 27-30, at page 3, lines 1-30, at page 4, lines 1-16, at page 6, lines 13-20, at page 10, lines 4-23, at page 12, lines 20-29, at page 13, lines 1-30, at page 14, lines 15-21, at Fig. 1, elements 105, 110, 115, 126, 132, 140, and 160, at Fig. 2, elements 140, 132, 146, and 160, and at Fig. 3, elements 330 and 335.

With reference to claim 2, in an embodiment of the invention, the backend data store comprises a relational database, and wherein an instance of the container-managed persistence entity bean corresponds to a row in a table of the relational database, which is described, by way of example and not of limitation, in the specification, at page 3, lines 3-4, at page 10, lines 4-14, at Fig. 1, elements 105, 126, 140, and 160, and at Fig. 2, elements 140 and 160.

With reference to claim 3, in an embodiment of the invention, the backend data store comprises a non-relational database, which is described, by way of example and not of limitation, in the specification, at page 10, lines 15-23, at Fig. 1, elements 105 and 160, and at Fig. 2, element 160.

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6. Grounds of Rejection to be Reviewed on Appeal

1. Whether claim 1 is unpatentable under 35 U.S.C. 103(a) over Hamilton (US Patent Number 6,889,227) in view of Messinger (US Patent Number 6,748,373), and Maritzen (US Patent Number 5,899,990).
2. Whether claims 2 and 3 are unpatentable under 35 U.S.C. 103(a) over Hamilton (US Patent Number 6,889,227) in view of Messinger (US Patent Number 6,748,373), Maritzen (US Patent Number 5,899,990), and Apte (US Patent Number 6,269,373).

7. Argument

A) The Applicable Law

Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. *In re Dillon* 919 F.2d 688, 16 USPQ 2d 1897, 1908 (Fed. Cir. 1990) (*en banc*), cert. denied, 500 U.S. 904 (1991). It is not enough, however, that the prior art reference discloses all the claimed elements in isolation. Rather, “[a]nticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*” *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP § 2131.

The Examiner has the burden under 35 U.S.C. § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). To do that the Examiner must show that some objective teaching in the prior art or some knowledge generally available to one of ordinary skill in the art would lead an individual to combine the relevant teaching of the references. *Id.*

The *Fine* court stated that:

Obviousness is tested by “what the combined teaching of the references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 878 (CCPA 1981). But it “cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination.” *ACS Hosp. Sys.*, 732 F.2d at 1577, 221 USPQ at 933. And “teachings of references can be combined *only* if there is some suggestion or incentive to do so.” *Id.* (emphasis in original).

The M.P.E.P. adopts this line of reasoning, stating that

In order for the Examiner to establish a *prima facie* case of obviousness, three base criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation

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of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. M.P.E.P. § 2142 (citing *In re Vaech*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir. 1991)).

An invention can be obvious even though the suggestion to combine prior art teachings is not found in a specific reference. *In re Oetiker*, 24 USPQ2d 1443 (Fed. Cir. 1992). At the same time, however, although it is not necessary that the cited references or prior art specifically suggest making the combination, there must be some teaching somewhere which provides the suggestion or motivation to combine prior art teachings and applies that combination to solve the same or similar problem which the claimed invention addresses. One of ordinary skill in the art will be presumed to know of any such teaching. (See, e.g., *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988) and *In re Wood*, 599 F.2d 1032, 1037, 202 USPQ 171, 174 (CCPA 1979)).

A factor cutting against a finding of motivation to combine or modify the prior art is when the prior art teaches away from the claimed combination. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path the applicant took. *In re Gurley*, 27 F.3d 551, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994); *United States v. Adams*, 383 U.S. 39, 52, 148 USPQ 479, 484 (1966); *In re Sponnoble*, 405 F.2d 578, 587, 160 USPQ 237, 244 (C.C.P.A. 1969); *In re Caldwell*, 319 F.2d 254, 256, 138 USPQ 243, 245 (C.C.P.A. 1963).

If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); MPEP § 2143.01.

The test for obviousness under § 103 must take into consideration the invention as a whole; that is, one must consider the particular problem solved by the combination of elements that define the invention. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985). Furthermore, claims must be interpreted in light

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of the specification, claim language, other claims and prosecution history. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1568, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987), cert. denied, 481 U.S. 1052 (1987). At the same time, a prior patent cited as a § 103 reference must be considered in its entirety, "i.e. as a *whole*, including portions that lead away from the invention." *Id.* That is, the Examiner must, as one of the inquiries pertinent to any obviousness inquiry under 35 U.S.C. § 103, recognize and consider not only the similarities but also the critical differences between the claimed invention and the prior art. *In re Bond*, 910 F.2d 831, 834, 15 USPQ2d 1566, 1568 (Fed. Cir. 1990), *reh'g denied*, 1990 U.S. App. LEXIS 19971 (Fed. Cir. 1990). Finally, the Examiner must avoid hindsight. *Id.*

As explained in M.P.E.P. § 2112, the express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. But, the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). Further, "[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

B) Discussion of the Rejections

1. Claim 1 is rejected as unpatentable under 35 U.S.C. 103(a) over Hamilton (US Patent Number 6,889,227), hereinafter "Hamilton," Messinger (US Patent Number 6,748,373), hereinafter "Messinger," and Maritzen (US Patent Number 5,899,990), hereinafter "Maritzen."

Claim 1

Claim 1 recites: "a container generates access calls to the backend data store, and wherein the container-managed persistence entity bean does not include the calls to the backend data store," which the Examiner admits is not disclosed by Hamilton. But, the Examiner relies on Messinger, which describes "container-managed persistence" at column 2, lines 33-34.

Hypothetically modifying Hamilton with the container-managed persistence of Messinger would destroy the function of Hamilton and render Hamilton inoperable for its intended purpose, which is compelling evidence of non-obviousness, for the reasons argued below.

The purpose of Hamilton is to enable “a computer application designed to operate in a two tier computer environment” to “operate in a three tier computer environment, without specific programming for the three tier computer environment,” as described by Hamilton at column 2, lines 33-37.

Hamilton explains its first, second, and third tiers at column 1, lines 39-52: “In a two tier environment, a client computer system (first tier) directly communicates with a database system (second tier) to access data. The second tier is often a relational database that uses Structured Query Language (SQL) as the protocol language for communicating with other systems. . . . In a three tier environment, a client system (first tier) has a GUI that communicates with an application running on an application server (second tier) which in turn communicates with a database server (third tier) for access to and storage of data.”

Hamilton accomplishes this purpose by “[a]n application server [receiving] the first database call from a client computer system and [mapping] the first database call to the general programming language call,” as described by Hamilton at column 2, lines 46-49. These mapped or converted commands are then “executed on the application server to access the database,” as described by Hamilton at column 4, lines 13-14.

Thus, the Hamilton converted commands include whatever calls to the database that they need in order to access the database, which contradicts and teaches away from “the container-managed persistence entity bean does not include the calls to the backend data store,” as recited in claim 1.

Further, if Hamilton were hypothetically modified so that “the container-managed persistence entity bean does not include the calls to the backend data store,” as recited in claim 1, then Hamilton would no longer be able to execute the mapped or converted commands “on the application server to access the database,” as described by Hamilton at column 4, lines 13-14, in order to accomplish the Hamilton purpose because the Hamilton

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“general programming language call may be an Enterprise Java Bean (EJB) call” (Hamilton at column 2, lines 43-45) and “[i]n response to executing the general computer language programming call, the application server generates the second database call” (Hamilton at column 2, lines 48-51). But, since Hamilton was hypothetically modified so that its bean (its general programming language call) no longer includes the call to the backend store, executing the Hamilton programming language call (bean) would no longer result in a call to the Hamilton database, so Hamilton would no longer convert a database call received from its client (first tier) into a call to its database server (third tier), so Hamilton would no longer enable “a computer application designed to operate in a two tier computer environment” to “operate in a three tier environment” (Hamilton at column 2, lines 29-36), so the Hamilton stated purpose would be destroyed by the hypothetical modification, which is compelling evidence of non-obviousness.

Maritzen does not teach or suggest “a container generates access calls to the backend data store, and wherein the container-managed persistence entity bean does not include the calls to the backend data store,” as recited in claim 1 because the Maritzen Abstract merely describes that a “Server … upon client command establishes a connection to a database,” so Maritzen does not teach or suggest container-managed persistence.

Thus, no suggestion exists to combine Hamilton, Messinger, and Maritzen, and Hamilton, Messinger, and Maritzen do not teach or suggest “a container generates access calls to the backend data store, and wherein the container-managed persistence entity bean does not include the calls to the backend data store,” as recited in claim 1

2. Claims 2 and 3 are rejected as unpatentable under 35 U.S.C. 103(a) over Hamilton (US Patent Number 6,889,227), hereinafter “Hamilton,” in view of Messinger (US Patent Number 6,748,373), hereinafter “Messinger,” Maritzen (US Patent Number 5,899,990), hereinafter “Maritzen,” and Apte (US Patent Number 6,269,373), hereinafter “Apte.”

Claims 2 and 3

Claims 2 and 3 are dependent on claim 1 and are patentable over Hamilton, Messinger, and Maritzen for the reasons argued above.

Apte teaches away from “a container generates access calls to the backend data store, and wherein the container-managed persistence entity bean does not include the calls to the

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backend data store,” as recited in claim 1, on which claims 2 and 3 depend, for the reasons argued below.

Apte at column 6, lines 45-51 and column 7, lines 18-21 recites: “Server object 402 contains the actual business logic that is implemented using application programming interfaces (APIs) that utilize the Java-defined Java database connectivity (JDBC) structured query language (SQL) database access interface, which provides uniform access to a wide range of relational databases. In the depicted example, these databases may be found in database 404. Server object 402 contains methods used to provide needed functions invoked from client object 400. The above mentioned methods could be written to access other backend systems (i.e. CICS, IMS, MQ, SAP, etc.) and should not be restricted to just JDBC or database access. … In the depicted example, two Java beans may be employed that implement the client object 400 and server object 402.”

Thus, in Apte, a Java bean, which implements the server object 402, contains the business logic that utilizes the SQL database interface, which provides access to relational databases. Thus, Apte contradicts and teaches away from claim 1, which requires that the “entity bean does not include the calls to the backend data store.”

Thus, no suggestion exists to modify Hamilton with Messinger, Maritzen, and Apte, and Hamilton, Messinger, Maritzen, and Apte do not teach or suggest, and teach away from, “a container generates access calls to the backend data store, and wherein the container-managed persistence entity bean does not include the calls to the backend data store,” as recited in claim 1, on which claims 2 and 3 depend, so claims 2 and 3 are patentable over Hamilton, Messinger, Maritzen, and Apte.

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Conclusion

Appellant respectfully requests reversal of the above rejections. If the Board is of the opinion that any rejected claim may be allowable in amended form, then appellant also respectfully requests a statement to that effect.

Respectfully submitted,

Date March 27, 2009

By

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Name Owen J. Gamon

Signature



8. CLAIMS APPENDIX

1. A method comprising:

receiving a specification of a method in a container-managed persistence entity bean and a procedure in a backend data store, wherein a container generates access calls to the backend data store, and wherein the container-managed persistence entity bean does not include the calls to the backend data store, wherein the container marks transaction boundaries, wherein the container includes the container-managed persistence entity bean, and wherein the receiving further comprises receiving the specification of the method and the procedure from a deployer;

in response to the receiving, generating code in a helper class associated with the container-managed persistence entity bean, wherein the helper class determines a connector based on a connection factory type, wherein the deployer supplies the connection factory type;

accessing the procedure in the backend data store via a backend-specific protocol and the connector, wherein the accessing the procedure in the backend data store further comprises invoking the procedure in the backend data store, wherein the code in the helper class performs the accessing and the invoking, and wherein the code in the helper class calls an evaluator class and passes results of the procedure, wherein the evaluator class evaluates the results;

receiving a specification of input and output records for the procedure in the backend data store; and

mapping the input and output records between the method in the container-managed persistence entity bean and the procedure in the backend data store, wherein the output

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records comprise the results, and wherein a state of the container-managed persistence entity bean persists beyond a lifetime of an application that uses the container-managed persistence entity bean.

2. The method of claim 1, wherein the backend data store comprises a relational database, and wherein an instance of the container-managed persistence entity bean corresponds to a row in a table of the relational database.

3. The method of claim 1, wherein the backend data store comprises a non-relational database.

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9. EVIDENCE APPENDIX

None.

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10. RELATED PROCEEDINGS APPENDIX

None.